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К вопросу о мотивационных механизмах геймификации в высшем образовании: теоретический аспект

В условиях цифровизации российского образования актуальной является проблема повышения мотивации, вовлеченности и удовольствия учащихся. Это одна из самых сложных проблем, присущих всем формам и уровням образования, особенно в рамках онлайн-обучения. Одним из средств, служащих разрешению этой проблемы, является геймификация. В зарубежной педагогике технологию геймификации, имеющую ряд методических и дидактических преимуществ, активно используют и изучают на протяжении многих лет, однако в России данная перспективная и популярная технология стала развиваться и изучаться только в последнее время. Также следует заметить, что большинство публикаций о геймификации (как отечественных, так и зарубежных) не углубляется в изучение ее мотивационных механизмов, определяющих ее эффективность, ограничиваясь описанием простой схемы 'стимул-реакция'. Недостаточно развито понимание различий между внешней и внутренней мотивациями и их роли в геймификации для создания долгосрочного и устойчивого эффекта. Наше исследование призвано внести теоретический вклад в эту область. С этой целью мы рассматриваем геймификацию с точки зрения философских и культурологических подходов и анализируем теории мотивации применительно к геймификации. В качестве теоретико-методологической базы будем использовать ключевые понятия философии прагматизма и социальной феноменологии, а также теорию самоопределения, теорию потока и транзактный анализ. Обозначенные нами в качестве теоретико-методологической основы философские идеи, ранее не применяемые для анализа геймификации, составляют научную новизну нашего исследования.

По результатам исследования авторы обосновывают положение, что в геймификации наиболее важную (но не исключительную!) роль играет внутренняя мотивация. Ее формированию способствует именно игровое мышление, в отличие от игровой механики ('очки, значки и таблицы лидеров'), которая ориентирована на внешнюю мотивацию. Показано, что геймификация – довольно сложная технология; при ее использовании приоритетное внимание должно уделяться поддержанию баланса между ее функциями: утилитарной (образовательной) и гедонистической (рекреационной). В геймификации, в отличие от любых игр (реальных и цифровых), развлечение является только средством, но не целью, забвение же этого очевидного факта чревато негативными последствиями. Делается вывод, что геймификация никогда не должна рассматриваться как панацея.

Ключевые слова: цифровизация образования, теория потока, геймификация, механизмы мотивации, философия образования, теория самоопределения, транзактный анализ

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On motivational tools of gamification in higher education: theoretical aspect

The digital turn in Russian education brings to the fore the problem of students' motivation, engagement and enjoyment. It is one of the most challenging problems inherent in all forms and levels of education, especially in e-learning. It can be partially solved through gamification. In foreign countries, gamification is a recognized technology having methodological and didactic advantages; it has been actively studied and used for many years. In Russia, this promising and popular technology has been addressed and started developing only recently. It should be noted that most studies on gamification (both Russian and foreign) tend to focus on its stimulus-response patterns without delving into its motivational capabilities underlying its efficiency. There is not enough understanding of the differences between external and internal motivations and their role in gamification to create a long-term and sustainable effect. Our research intends to make a theoretical contribution to this field. For this purpose, we look into gamification in terms of philosophical and cultural approaches and analyze motivation theories with regard to gamification. We will use the key concepts of philosophy of pragmatism and social phenomenology and the Self-Determination Theory (SDT), the flow theory and the Transactional analysis (TA) as a theoretical and methodological framework. The philosophical concepts that we took as a theoretical and methodological basis have never been used in gamification analysis. Thus, they represent scientific novelty of our research.

Based on the research results, the authors substantiate the thesis that intrinsic motivation plays an essential (but not an exclusive!) role in gamification. It is game thinking that contributes to the formation of internal motivation, in contrast to the game mechanics ('points, badges and leaderboards'), which is focused on external motivation. Showed that gamification is quite a challenging technology; when it is used, priority attention should be given to maintaining the balance between its utilitarian (educational) and hedonic (recreational) functions. In gamification, as distinct from any games (real and digital), entertainment is a method rather than a purpose; forgetting this obvious fact is fraught with negative consequences. It is concluded that gamification should never be seen as a universal remedy.

Key words: digitalization of education, flow theory, gamification, motivational tools, philosophy of education, Self-Determination Theory, Transactional analysis

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Introduction

Most educational theorists and practitioners agree that higher education is facing serious problems involving students' motivation and engagement. An increasing number of students see traditional education as inefficient and boring. Education needs new approaches.

Modern education undergoing digital transformation, the imperative of which has been compellingly demonstrated by the present COVID-19 pandemic, still has to deal with the problem of student engagement in the learning process. In fact, in terms of its requirements for self-discipline and self-control, it is as strict as traditional education where external motivation (including the negative one – punishment, bad grades) can compensate for a lack of internal motivation in a student.

In digital education as well as traditional education, students' engagement is still on the top of the agenda; it can be partially solved with the help of digital techniques, which have proved their educational efficiency. One of these technologies is gamification.

As J.Y. Ardila-Muñoz notes: Gamification in higher education offers the following benefits: it helps increase control over students' actions; grading stops being punitive; the teaching-learning relationship is based on competitiveness and cooperation and facilitates problem-based learning [1].

In this way, implementing gamification in the learning process, present-day (university and school) teachers are trying to resolve Kant's famous *pedagogical paradox*: "How is it possible that we become autonomous and rational persons, when this result relies on coercive educational action?" [21, p. 205].

Moreover, game techniques and their application, especially in e-learning scaling up with increasing digitalization of education, can be interesting and motivating not only for the present-day 'digital' generation growing up in the time of gadgets, video games and social media, but also for an older generation interested in further or new education.

However, we must admit that although gamification is gaining popularity as a promising technique for boosting motivation, encouraging behavior change, constructive competition and cooperation, but in the meantime, the initial enthusiasm about deploying gamification in learning environments has recently scaled back. Even though the number of gamified systems is growing, their success is still limited, as gamification of learning is a rather difficult phenomenon to study and requires not only pedagogical and IT inputs, but also competence in IT, psychology, philosophy and cultural studies. To a great extent, the problem is caused by insufficient attention to specific features of the motivational tools of gamification.

Although most of the researchers recognize the importance of motivational mechanisms, which are critical for gamification efficiency, but few scholars place emphasis on their study. The leading gamification authorities (who have successfully tested the results of their studies through practice) are K. Kapp et al. [15; 16], D. Dicheva et al. [7], A. Domínguez et al. [8], S. Kim et al. [18]. We will rely on their ideas in our study.

The purpose of this article is to conduct a conceptual analysis of gamification in the context of philosophical and cultural approaches and to analyze the main theories of

motivation with regard to gamification. As is well known, there are many motivational learning theories. For example, K. Kapp, one of the scholars whose ideas we rely on, analyzed 12 theories of motivation (comprising 6 models) in learning [15]. Our choice is limited by those theories that are most frequently mentioned in the scientific literature on gamification and best correspond to it: Self-Determination Theory (SDT) and the flow theory by M. Csikszentmihaiui. Therefore, we have narrowed down our discussion to these interrelated theories, with consideration for the extent of their development, their practical utility for gamification, and the availability of studies proving their efficiency. A new contribution is the application of the Transactional analysis (TA) by Eric Berne to the analysis of motivational mechanisms of gamification.

Methodology

The article is a theoretical interdisciplinary study, thus calling for an integration of cultural, philosophical, pedagogical, social and psychological approaches and methods. The concepts of Self-Determination Theory (SDT) by E.L. Deci and R. Ryan, the flow theory by M. Csikszentmihaiui, the Transactional analysis (TA) by E. Berne serve as a theoretical and methodological framework for our essay, including the analysis of these theories as applied to gamification of learning.

In the context of our article, we apply ideas of pragmatism and social phenomenology, seeing them as methodologically useful and innovative:

1. the concept of 'sense of reality' (i.e. our willingness to perceive the world around us as real), where reality means relation to our emotional and active life [14] or to our 'wide-awakeness'¹.
2. the concept (which takes its roots in the first concept and lays the foundation for the third concept) of Multiple Realities [31] or 'sub-universes' [14].
3. the concept of distinguishing between the 'World of play' and the 'World of work' (corresponding to the natural attitude of daily life and its pragmatic motive).

The first concept demonstrates the organic consistency of the popular flow theory by M. Csikszentmihaiui with the philosophy of pragmatism and social phenomenology.

The second concept is a forerunner of the modern-day polyontic (ontologically pluralistic) paradigm in philosophy; it is methodologically important in studying the intricate ontology of game technologies and worlds, as well as in explaining the motivational, exciting, or irresistible character of a game.

The third concept is important for explanation of the specifics of gamification as a technology built on the overcome of dichotomies that are used in the 'World of play' (non-serious, non-utilitarian reality) and 'World of work' (serious reality, "in which we have not a theoretical but an eminently practical interest" [31, p. 402]) opposition.

The philosophical concepts that we took as a methodological basis have never been used in gamification analysis (thus, they represent scientific novelty of our essay); they can be useful in further studies in this field.

Our study assumes the possibility of using a speculative approach and extrapolating the findings to a social environment.

¹ the term that A. Schutz used to designate a plane of consciousness of highest tension originating in an attitude of full attention to life and its requirements [31].

Results

1. Games as precursors to gamification

Although games used to be perceived as antithetical to learning, the inextricable connection between playing and learning has been recognized and used in education for a long time. It is enough to recall the pedagogical ideas and efforts to implement them of such thinkers as Tommaso Campanella, François Rabelais, Jean-Jacques Rousseau and John Locke, education reformer John Amos Comenius, Friedrich Froebel and Jean Piaget, ect. However, the above philosophers and pedagogues focus their attention on play and its role in education of children rather than of adult students. Game elements in higher and further education came to attention of scholars in the 20th century during implementation of active learning methods.

Games have advantages, which, in opinion of a number of scholars, make them indispensable in education: They can help develop social practices [28]; they improve logical reasoning and critical thinking skills [11]; they help gain cognitive skills; they may improve students' concentration and attention levels; they develop complex thinking and strategic planning skills [19]; they support multidisciplinary learning [25]; they enhance motivation toward learning [17]. Games also help develop digital literacy by enabling an individual to encode/decode his storytelling and deepen communicative, creative and recreational skills [2]. Further, games encourage students to play an active role in the learning process, thus supporting active learning, experimental learning and problem-based learning [26] as well as team cooperation, thus helping improve the emotional climate in the group.

Later on, these and others [10; 24] benefits of games (first of all digital games) became a driving factor for maturation of gamification technology and its integration into learning environments. And many motivational elements of a game, such as competition, prize incentives, logic of overcoming obstacles, freedom to influence the game world, its prompt response to any action of the player are borrowed by gamification and determine its effectiveness.

2. Two prevailing approaches to gamification technology in education

Gamification is a relatively new interdisciplinary concept. "Although the history of games goes back to the old ages, scientific research that includes the gamification concept is only seen since 2010" [3, p. 223].

The analysis of scientific literature shows that most scholars [27; 30] turn to definition of Deterding et al.: "Gamification is the use of game design elements in non-game contexts" [5, p. 10]. The popularity of this definition, which, in fact, has become a classic, is determined by the relative simplicity of its implementation. That is why this type of gamification is most commonly used.

R. Hunicke, M. LeBlanc & R. Zubek [13], G. Zichermann & C. Cunningham [33] have proposed a theoretical gamification framework (or game design), which comprises three elements: mechanics, dynamics and aesthetics (MDA). Mechanics includes virtual or real-world gifts or rewards, scores and ranking tables, achievements, avatars, points, badges, levels, quests, team or solo challenges. Mechanics or rules allow students to make a commitment to overcome any obstacles they may encounter. Dynamics, in its turn, addresses the needs that should be satisfied. It (for example, in the form of storytelling)

involves participation, curiosity and immersion in the game reality. Aesthetics refers to the way game mechanics and dynamics interact with 'art' to produce emotional results. There are other opinions about the gamification framework, but the MDA framework is generally accepted, so we will stick to it.

Out of these three elements of the game design/gamification framework, practical pedagogy tends to give priority to Game Mechanics. As follows from the classification of K. Kapp, L. Blair and R. Mesch [16], there are two types of gamification: structural gamification, which is characterized by the use of *game mechanics* irrespective of the content, and content gamification, where information, dynamics and the content are altered through application of game design elements.

It can be said that the first type is more common in education, as it offers a simple strategy for employing game mechanics without making substantial changes in learning materials [6]. The PBL (points, badges, and leaderboards) model comprising core elements of structural gamification is the most illustrative manifestation of this approach.

As K. Kapp notes, gamification focused on PBL or, in other words, on extrinsic motivation will encounter difficulty creating a long-term and long-lasting effect (like any activity without intrinsic and sustainable motivation). The Point Rating System (PRS) used by Russian universities demonstrates the rightness of his opinion. Kapp offers a much broader interpretation of gamification: "Gamification is using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems" [15, p. 10].

The most important element of gamification, in Kapp's opinion, is *Game Thinking*, i.e. the ability to present a boring duty in the form of an interesting activity, in which people want to invest brain share, time, and energy. It is the idea of converting an everyday experience into "an activity that has elements of competition, cooperation, exploration and storytelling" [15, p. 11]. Remember how Tom Sawyer tricked his friends into doing (enthusiastically!) his punishment job – whitewashing the fence for him. He presented the mandated duty as a free-will fun. The job was the same, but its modality changed: It was no longer work and punishment, it became a game. This is the essence and purpose of gamification: to be able, like Tom Sawyer, to present a useful, necessary, but boring activity (learning) as an interesting, exciting activity (game).

Thus, based on our analysis, we can declare existence of two prevailing approaches to gamification technology in education. The first approach, S. Deterding et al., is narrow and primarily targeted at external motivation, though it is technically implementable in practice; the second approach, K. Kapp, is wider and targeted at internal motivation (though not denying the importance of external motivation), but it is more challenging in implementation. The other scholars prefer either to side with one of these viewpoints or try to settle down between these two extremes.

The opposition between these approaches can be explained by the uniqueness of gamification. It is an extremely unstable and paradoxical phenomenon, as it presents a combination of utilitarian (learning) and hedonic (game) activities incorporating different mechanisms of motivation, and this difference makes it difficult to keep them in balance. Both groups of scholars are aware of the uniqueness of gamification, which is different from both entertainment games and serious games (for example, simulation-games, which are used in professional areas such as training of rescuers, healthcare professionals, flight training, etc.)

3. The concept of play and the concept of gamification: similarities and differences

Let's turn to the concept of a game. This will also clarify the concept of gamification.

Based on the studied game concepts of such leading scientists in this field as J. Huizinga [12], K. Kapp [15], S. Kim et al. [18], A.A. Komissarov [20], J. McGonigal [24], we can say that the main distinctive games' features these researchers consider the following: Conditionality of events, spatial and temporal boundaries, goals, fixed rules, participant involvement (through the 'reality effect' and fun), freedom, voluntary participation, non-expectation of material utility, abstract challenge, interactivity, feedback and emotional reaction.

Generalizing their representations, we can give the following definition of the game: The game is a special conditional reality, which emerges and exists during interaction of its participants, which is governed by the rules that are selflessly, voluntarily, unreservedly and cheerfully adopted by the players.

Thus, ontological distinction between gamification and games implies that the game is a space and time-constrained conditional reality, while gamification is an educational tool, which creates a shell for the reality we live but itself (unlike the game) is not separate reality. Therefore, gamification takes place during the entire learning process (covering the entire course), while the game, which has the beginning and the end, is limited to a single topic, to one, or, at best, to several classes. It should be clarified that this distinction is demonstrated if we hold to S. Deterding's rather than K. Kapp's concept of gamification.

While S. Deterding et al. emphasize the piecemeal nature of gamification (distinguishing it from any full-fledged games, both serious and entertainment), K. Kapp and his followers think that gamified learning can be done in different versions: "either in the form of a full-fledged educational game, in the form of game-elements on top of normal tasks like running for exercise, or in the form of an engaging classroom experience" [15, p. 18].

However, all of the above researchers agree that the fundamental difference between the entertaining game and gamification can be found in their purposes. "Unlike games, the primary aim of gamification in learning is not to entertain but rather to motivate learners to develop skills or change behaviors through enjoyable experiences" [7, p. 7].

As for serious games, the difference between them and gamification is difficult to explain, as they have many similar functions. K. Kapp, for example, believes that "serious games are a form of gamification because serious games are a specific sub-set of the meta-concept of gamification" [15, p. 18]. Many scientific authors assume that the primary goal of gamification is to engage, motivate, teach and retain students in the learning process by making learning enjoyable, while serious games are aimed at skills development with the help of simulations and without focusing on motivation [23].

4. Three theories of motivation of gamification

Motivation forms a basis for any gaming principle. This gaming principle that underlies gamification can make learning experiences more engaging and immersive.

The educational environment demonstrates two main types of motivation: intrinsic and extrinsic. The first type involves self-actualization of students; it is controlled by students; and it is self-sustaining. Intrinsic motivation, where the inspiration for performing an action can be found in the action itself, represents the most self-determined behavior regulation. The second type depends on external factors: "Extrinsic motivation is influenced by environmental and external factors, such as rewards, pressure, or punishment" [18, p. 39].

Let's look at three theories of motivation in more detail.

The self-determination theory (SDT) suggests that an individual has three basic psychological needs: autonomy (the power to make their own choices), competence (the ability to effectively perform the behavior) and relatedness (social connections with others). To achieve intrinsic motivation all three of the psychological needs must be satisfied. Gamification based on these principles demonstrates its efficiency. Autonomy: The concept of game implies that it is a voluntary activity, as stated by J. McGonigal [24]. "It is the feeling of having control over one's actions and is an integral part of SDT" [15, p. 63]. If gamification is applied by taking away the right of students to choose tasks or even refuse to complete them, it can produce an opposite effect, nullifying the functions that can capture the interest of the users.

The feeling of competence is satisfied by successful accomplishment of the tasks, preferably non-trivial ones. Immediate feedback is also important, and, as distinct from traditional learning, it can be easily provided due to the interactive nature of a digital learning. Students will be completely immersed in an activity, will be in flow, and thus additionally motivated, if they are given a wide range of tasks of different complexity and matching their level of training. The need for relatedness is satisfied through constructive competition or cooperation with other students while working on the tasks.

SDT is an important source for gamification. Its effectiveness is recognized by gamification gurus and is largely explained by the fact that this theory fits in the game thinking, the significance of which was emphasized by K. Kapp.

Selflessness, voluntariness and freedom, mystery and markedness are parameters distinguishing the game from other types of activity; they along with competition and cooperation is encapsulated the Game Thinking, which we discussed earlier. Selflessness, voluntariness and freedom are consonant with the needs for autonomy; competition and cooperation – the need for relatedness; a mystery of the action and the markedness of the members of the game community provide a feeling of selectness and satisfies the need for competence. Remember how Tom Sawyer, who had never heard of SDT, intuitively used its concepts: He presented the fence whitewashing not as a punishment, which, in fact, it was, but as a voluntary and desired task (autonomy), supposedly very difficult (competence), and available only to the privileged (relatedness).

According to J.J. Lee & J. Hammer, games are motivating because of their impact on cognitive, emotional and social areas of players; therefore, gamification in education should also focus on these three areas [22]. The approach offered by the above authors will serve as an additional theoretical basis for our discussion, because this approach can be applied to SDT. The cognitive area is directly related to the need for competence, while the emotional area is linked to the need for autonomy and the social area involves the need for relatedness.

All the three areas as well as the psychological needs underlying students' motivation do not have clear boundaries, as gamified activity is rarely limited to a single area or need. "For example, many items that are awarded to players on success are just keys to new cycles of expertise that increase game complexity and difficulty, impacting both emotional and cognitive areas. Social area is always mixed with cognitive area, when a task must be solved by means of player cooperation or competition; or with emotional area, when rewards systems have an impact on players' social status" [8, p. 382].

The flow theory by is another motivation theory explaining the appeal of games in education. The flow is "the holistic sensation present when we act with total involvement" [4, p. 136].

M. Csikszentmihalyi indicates six elements of the flow experience: 1) merging action and awareness; 2) centering of attention; 3) loss of ego; 4) control of action and

environment; 5) demands for action and clear feedback; 6) autotelic nature of flow [4]. Gamification tools and techniques make it possible to reach a state of flow characterized by key components such as immediate feedback, commensurate challenges and skills, and clear goals. Commensurate challenges and the person's level of skill and abilities correspond Achievement Principle's J.P. Gee [10].

While the low level of challenge leads to boredom, the overly high level may cause frustration. However, "college students perceived work where skills exceeded challenges to be more enjoyable than flow activities where skills matched challenges" [9, p. 601]. In this case, the 'Regime of Competence' Principle is included: "The learner gets ample opportunity to operate within, but at the outer edge of, his or her resources, so that at those points things are felt as challenging but not 'undoable'." [10, p. 207-212]. Here we see similarities between the flow theory and Vygotsky's theory of zone of proximal development and Piaget's theory of cognitive development.

The problem is that gamification causes a state of flow much more rarely than commercial games [29]. The educational content and its assessment (in the form of tests, etc.) can inadvertently interrupt the flow state [32]. To prevent any risk of interruption, gamification designers use internal analytics to collect data on participating students (the so-called digital footprint), to adapt (to customize) tasks to the individual characteristics of the student to maintain flow and ensure prompt feedback. Therefore, the gamified learning process can run smoothly and imperceptibly (assessments are made unnoticeably), and the flow is not interrupted [32].

To conclude the discussion on the prospects of the flow theory in relation to gamification, we will give Kapp's opinion: Although flow is elusive and cannot always or easily be designed into gamification, but the concept of flow serves as a good guidepost for the gamification of learning [15].

The next motivation theory, first introduced by us in the gamification context, is based on achievement motivation well-known in Russian career counseling. It assumes that the individual's volition can be summarized as three principles: "I want (desire). I can (abilities and skills). You must (duty)". These principles also represent three components of motivation to learn. These three components correspond to three ego states defined by E. Berne as I want – the Child, I can – the Adult and You must – the Parent. In the ideal learning process, all these components function unitedly and harmoniously. However, in real practice such unitedness is difficult to achieve. While in traditional education, abilities, skills and competencies (the I-Can sector) are usually developed through the ego-state of Parent (the You-Must sector) representing the duty, in game learning they are developed through the ego-state of Child (the I-Want sector) representing not only creative manifestations, but also infantile reactions, pursuit of pleasure.

As for full-featured gamification, it is designed for maintaining the balance between two ego-states: that of Parent representing the purpose of gamification and that of Child representing its means. This should be remembered to resist the temptation of limiting gamification to its game components and thus replacing the purpose with the means. Motivation through entertainment cannot serve as a robust foundation for such complex activity as learning that requires self-discipline, self-control, great efforts as well as the ability to overcome oneself. "Learning is a complex, proactive, and typically lengthy activity that requires stronger inner motivation and sustained effort" [7, p. 7]. The main task here is to achieve academic self-reliance and independence. Any learning (online or off-line) is based on the ego-state of Adult, a responsible individual. The voluntary participation in

gamification requires a high (reached by no means all) level of autonomy, without which it demotivates the student. In this case, we can clearly see that traditional or mixed education is more efficient than innovative learning: When required, it turns to the ego-state (including the external one) of Parent who quiets down the ego-state of Child and compensates for the weakness of the ego-state of Adult.

So, we are facing a dilemma: If a person does not have a well-developed ego-state of Adult, the benefits of gamification (voluntary participation, freedom of choice, etc.), eventually, will count against it. If we opt for methods of traditional learning, when the Parent's prerogatives are passed on to the external authority, in other words, to the teacher, and gamification is deprived of its voluntary nature (which, by the way, was done through the PRS at Russian universities), the efficiency of learning (driven by external negative motivation), will, undoubtedly, improve, though gamification will lose its meaning.

Trying to solve the dilemma, we can be tempted to choose one of the two paths of least resistance: We can either focus on rewards (external motivation) or develop psychological game-dependent (internal) motivation.

Although theorists and practitioners engaged in gamification of education tend to give priority to gamification based on rewards, as it is better known and is easier to implement, they clearly realize that external rewards can eventually erode the motivation.

The very need for external rewards may indicate the absence of intrinsic motivation. After all, if people are genuinely interested in any activity, they may not only refuse from remuneration, but also may be willing to invest their money, time, intellect, etc. An obstacle at work is perceived as a challenge in a game. This fact is related to the difference between the *'World of play'* and the *'World of work'*. Gamification of education is intended to change the modality of a learning activity, presenting it as a game (enjoyment) rather than work (duty). But presenting gamification as a game, we should not turn it into a game itself, keeping in mind the above-mentioned difference between a game and gamification: While for games, entertainment is a primary purpose, in gamification it is merely a tool.

If the difference is neglected (as it can be observed when the ego-state of Child is given priority over and at the expense of other ego-states), it will result in game addiction. This situation is fraught with the following danger: If gamification was highly involving, the students may experience withdrawal syndrome, which can result in decreased efficiency of education and even in the loss of the effect previously typical of usual (without gamification) classes. It is the main drawback and the main threat specific to gamification, which is based on game thinking and game addiction.

Thus, game mechanics focusing on external motivation (external rewards) and game thinking targeted at development of internal motivation, when driven to extremes, have their own pitfalls.

In the first case, students will focus on rewards, memorabilia, and prizes without understanding learning goals and objectives of gamification and without developing intrinsic motivation to learn. In second case, students will be psychologically game-dependent, which can result in strengthening the game rather than educational addiction. Students will stop accepting the educational process without games.

Gamification is quite a sophisticated tool; when it is used, priority attention should be given to maintaining the balance between the dynamics and the content saturation, between the engagement and the educational component, between the drive and the utility.

Thus, we can state that gamification can serve its purpose as a balanced combination of serious and game activities only if it is designed in conformity with psychological and pedagogical principles. The dominance of the first activity can lead to a lack of involvement in learning, a decrease in motivation, the dominance of the second – to the formation of game addiction, the loss of the socialization value of education as preparation for life, which is often not the ‘World of play’, but the ‘World of work and care’. Life is not a game; it consists of numerous duties, which we have to fulfil regardless of our dislikes. When we turn learning into a game, we squander its educational value.

Discussion

We can state that all motivation theories, which we analyzed in the article, tend to agree that extrinsic motivation is not sufficient to maintain long-term interest in any activity. To produce a continuous effect gamification must involve intrinsic motivation of the player, which is formed under the influence of game thinking, while external motivation is produced by game mechanics. Nevertheless, the importance of external motivation does not underestimate.

We also noted the adverse consequences (which researchers tend to neglect) of overusing game mechanics as well as game thinking in gamification.

Also, as our own theoretical contribution, we have introduced concepts of transactional analysis into the discussion of motivational mechanisms of gamification. We have concluded that gamification is quite a challenging technology, which tends to be efficient when it is used with people having a well-developed volition domain accommodating all of the three ego-states of a person – Adult, Parent, and Child – who harmoniously co-exist and complement each other.

Following K. Kapp we come to an understanding that gamification should not be seen as a universal remedy. “If gamification is seen as a panacea and applied to every single learning event, it will quickly become trivialized and non-impactful” [15, p. 14].

Unlike games, gamification cannot rely solely on its gaming appeal. It must maintain the balance between its utilitarian and hedonic functions. Otherwise, it will lose its distinctive nature.

On the one hand, play is perceived as an activity having little to do with daily life strains and duties; on the contrary, it offers an escape from them. This perception is based on the paradigm of the opposition between the ‘World of play’ and the ‘World of work’ (in social phenomenology terms). On the other hand, as we tried to argue in our article, it is gamification that removes this opposition, exposing the fact, that the same activity can be perceived either as play or as work, depending on the way it is presented (as a voluntary or mandated activity). The problem is not in the activity itself, but in our attitude to it.

Conclusion

Considering all the above, we can say that many technologies invented initially for entertainment and communication start serving more practical and pragmatic purposes. They help dissolve boundaries of the private and public, personal and communal, intimate and publicly available, significant and insignificant, occupation and hobby, work and leisure, amusement and duty. Gamification demonstrates that synthesis of these dichotomous notions is possible.

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